



TRMM Flight Operations Monthly Status Review (MSR)

July 7, 2003



FOT Subsystem Overview

- Operations Status
 - Flight Ops Summary - Lou Kurzmiller
 - Electrical/Thermal - Dave Sepan
 - RCS - Dave Sepan
 - ACS - Dave Sepan
 - Power & Deployables - Justin Knavel
 - FDS - Joe Kowalski
 - C&DH - Nega Berhanu
 - RF/Comm - Nega Berhanu
 - LIS - Nega Berhanu
 - CERES & VIRS - Justin Knavel
 - TMI - Dave Sepan
 - PR - Joe Kowalski
 - Ground System - Justin Knavel
 - Upcoming Activities - Justin Knavel



Flight Operations Summary

- Supported 483 SN events in June
 - 1 Yaw Maneuver; now -X as of 20 June 03
 - 2 Delta-V Maneuvers; #437 & #438
- No Anomaly Rpts, 1 Event Report & 2 Late Acqs
 - ER #307: Late Acq; 8:41 min late acq (03 June)
 - Late Acq on 02 June; 30 May (since last MSR)



Flight Operations Summary

- Notable Events
 - Continued support of AutoFDS implementation effort
 - Supported Power Subsystem switch to VT6 effort
- No changes to FOT personnel status in June.
- FOT Concerns:
 - Retain FOT talent/experience, sufficient to handle all tasks
 - Aging MOC equipment
 - Support new ground system initiatives (challenge vice concern)
 - Any potential s/c problem



Thermal / Electrical Subsystems

- The Thermal subsystem remains nominal
- The Electrical subsystem remains nominal



RCS Subsystem

- RCS performed 2 successful Delta-V maneuvers (#437 - #438)
 - Current fuel remaining is 208 kg by the mass flow method.
 - Current fuel remaining by the PVT method is 186 kg.
 - Current Precision Pressure Transducer level is down to 154.4 psia.
- RCS subsystem is in “blow down” mode and is no longer pressure regulated.
- The current EOL estimate at 402.5 km is Mid-2004 using 134 kg of fuel as a baseline for controlled re-entry.
- Upcoming Events
 - Continue to review and train with Delta-H procedure, EOL scripts, and the “one-shot” procedure.
 - Review all required steps for a 30+ minute Delta-V maneuver and test with the simulator.



ACS Subsystem

- ACS is performing nominally.
- ACS System Tables 57, 58, and 67 containing the TAM-B calibration values were copied to EEPROM from RAM on 03-174 (June 23rd).
- Upcoming events:
 - Update the S/C mass.



Power Subsystem

- VT 6 for 3 orbits on 03-177 (June 26th) and 03-180 (June 29th).
 - During extended periods at low Beta Angles with the Power system configured to VT 5, Battery 1 undercharges and the SOC drops. The Power system is configured for short periods of time to VT 6 to recharge the battery.
- 03-150 (May 30th) Battery SOC counters were reset to 100%.
 - During an extended period at low Beta Angles, the Battery 1 Min SOC had dropped to less than 10% above the loadshed threshold. The Battery SOC counters were reset prior to an upcoming Solar Eclipse to prevent a potential unnecessary loadshed.
- AR#98 – PSIB-B Chassis Current Yellow High
 - Closed. Verified 1 Amp drop which corresponds to a Solar Cell String short. The short was on the +Y Outer Panel. The reason for the short is unknown. Possible reasons are micro-meteor hit or degradation due to space environment (atomic oxygen, etc.). The YH Chassis Current limit was set to 2 Amps to monitor any further problems.



Deployables Subsystem

- -Y SA Sticking Anomaly On-going Work
 - Configure ACE for 15° in Safehold. (Do we want to do this?)
 - SunAcq configured back to 0° pitch in RAM and EEPROM remains at 15° pitch until the investigation is completed.



FDS Subsystem

- The FDS Subsystem remains nominal
- Table changes
 - 03-174 (June 23rd) ACS System Table #57, 58, and 67 loaded from RAM to EEPROM



C&DH Subsystems

- UTCF/FS Status:
 - 3 UTCF Adjustments were performed on 03-155 (Wed., June 4th), 03-169 (Wed., June 18th), and 03-180 (Sun., June 29th).
 - » Current UTCF value is 31535996.785811 sec
 - » Current FS value is x'80E'.
 - No positive leap second will be introduced at the end of Dec. 2003.
 - No Open issues



RF Subsystem

- 2 Late Acquisitions occurred during this report period.
 - GLA #141: Occurred on 03-150 (May 31st) during the 14:48z 171/SA1 event. Acquisition was 1:16 min late. 1 GCMR was sent; No impact on data storage activities (CDS-30835).
 - GLA #142: Occurred on 03-153 (June 2nd) during the 23:18z TDW/SA1 event. Acquisition was 1:14 seconds late. 1 GCMR was sent; all data was recovered (CDS-30835).
- 1 RF-related Event Report since last MSR.
 - ER #307: Occurred on 03-154 (June 3rd) during the 22:53z TDS/SA2 event. Acquisition was 8:41 min late. Multiple GCMR's were sent and we acquired lock at 23:02:11z. VR4 & VR 6 were completed during the remainder of the pass and the rest were completed on the following pass. No impact on data storage activities.(CDS-32899).
- Frequency offsets (monthly average)
 - Transponder #1 = - 14.431 Hz
 - Transponder #2 = + 84.811 Hz

No open issues



LIS Instrument

- 3 Routine MSFC real-time command requests were performed on 03-154 (Tue., June 3rd), 03-167 (Mon., June 16th), and 03-176 (Wed., June 25th), to reduce packet sequence errors.
- No open issues



CERES/VIRS Instruments

- **CERES.**

- Powered OFF.

- **VIRS**

- On 03-161 (June 10th) VIRS reset itself at 14:49:27z. The instrument was re-configured on the 14:51z event.
- On 03-170 (June 19th) two VIRS Solar Calibrations were performed at 05:14:08z and 08:19:08z.



PR/TMI Instruments

- No open issues with the PR instrument
- PRLNAANALYSIS performed on 03-167 (June 16th)
- No open issues with the TMI instrument



Ground System / Security

- Router upgrades were performed to allow connection to the backup Building 32 router. Each String received a prime and backup router Hub. The dates are as follows:
 - String 2 on 03-154 (June 3rd).
 - String 3 on 03-155 (June 4th).
 - String 1 on 03-163 (June 12th).
- The video card on TR1WS1 workstation was not working properly. The hard drive for TR1WS1 was transferred into a new workstation case on 03-167 (June 16th).
- TR3XT5 monitor was replaced on 03-170 (June 19th).



Upcoming Activities

- 0-2 Months
 - Update SC mass/area table.
 - Load new Evacuation Contingency configuration (Goto SunAcq).
 - » SC RTS
 - » SC TSM
 - » Reallocate VR space
 - Pitch 15° in SunAcq and Safehold or not?
 - ACS System Table 90 to transition from Delta-H Mode to Earth Acq.
 - Place remaining permanent table / patch changes into EEPROM
 - Support finalization of TRMM End of Life and Reentry Plan
 - Continue Testing of Auto-FDS



Upcoming Activities

- 2-3 Months
 - Write Contingency Plan
 - Participate in End of Life Plan review(s)
 - End Of Life Plan Testing, and Simulations
 - Continue to close open CCRs, MOCRs, and MSR Action Items